

**Preliminary Amendment**

Applicant: Min Wee Low, et al.

Serial No.: Not yet assigned

(International Application No. PCT/IB2004/000496)

Filed: Herewith

(International Filing Date: 26 February 2004)

Docket No.: I431.173.101/FIN588PCT/US

Title: **NON-LEADED SEMICONDUCTOR PACKAGE AND A METHOD TO ASSEMBLE THE SAME**

---

**IN THE CLAIMS**

Please cancel claims 1-13 without prejudice.

Please add claims 14-33 as follows:

~~Patent Claims~~ **WHAT IS CLAIMED IS:**

1.-13. (Cancelled)

14. (New) A method to assemble a leadframe strip assembly comprising:  
providing a metal foil;  
attaching a carrier tape to the metal foil; and  
forming a plurality of leadframes in the metal foil, each leadframe comprising a die pad laterally surrounded by a plurality of contact leads.

15. (New) The method to assemble a leadframe strip assembly according to claim 14, comprising forming the plurality of leadframes by an etching process.

16. (New) The method to assemble a leadframe strip assembly according to claim 14, comprising performing the etching process from one side of the metal foil forming a plurality of isolated leadframes.

17. (New) A leadframe strip assembly comprising:  
a carrier tape including a metal foil attached thereon; and  
a plurality of leadframes formed in the metal foil, each leadframe comprising a die pad laterally surrounded by a plurality of contact leads in the metal foil.

18. (New) The leadframe strip assembly according to claim 17, comprising wherein the die pad and contact leads of each leadframe of the metal foil are spatially isolated from each other.

**Preliminary Amendment**

Applicant: Min Wee Low, et al.

Serial No.: Not yet assigned

(International Application No. PCT/IB2004/000496)

Filed: Herewith

(International Filing Date: 26 February 2004)

Docket No.: I431.173.101/FIN588PCT/US

Title: **NON-LEADED SEMICONDUCTOR PACKAGE AND A METHOD TO ASSEMBLE THE SAME**

---

19. (New) The leadframe strip assembly according to claim 17, comprising spatially isolating each leadframe of the metal foil from its neighbor.
20. (New) The leadframe strip assembly according to claim 17, wherein the carrier tape comprises a polyimide film with a silicone adhesive coating and the metal foil comprises OFHC Cu.
21. (New) The leadframe strip assembly according to claim 17, wherein the metal foil comprises a thickness of approximately 1mm to approximately 0.01mm or approximately 0.25mm to approximately 0.1mm.
22. (New) The leadframe strip assembly according to claim 17, wherein the leadframe strip assembly further comprises a plurality of semiconductor die, each including an active surface with a plurality of die contact pads and a passive surface, attached to the die attach pads and electrically connected to the leadframe by a plurality of bond wires connecting the die contact pads and the lead contact areas of the contact leads.
23. (New) The panel comprising a section of the leadframe strip assembly according to claim 22, comprising encapsulating the plurality of dies, contact leads, wire bonds and upper surface of the carrier tape with mold material.
24. (New) A method to assemble a non-leaded semiconductor package comprising:  
providing a panel according to claim 10;  
removing the carrier tape; and  
singulating the non-leaded semiconductor packages.
25. (New) A non-leaded semiconductor package comprising:  
a leadframe comprising a die attach pad approximately in its lateral centre, laterally surrounded by a plurality of contact leads each having a contact area;  
semiconductor die including an active surface with a plurality of die contact pads and a passive surface, attached to the die attach pad electrically connected to the leadframe by a

**Preliminary Amendment**

Applicant: Min Wee Low, et al.

Serial No.: Not yet assigned

(International Application No. PCT/IB2004/000496)

Filed: Herewith

(International Filing Date: 26 February 2004)

Docket No.: I431.173.101/FIN588PCT/US

Title: **NON-LEADED SEMICONDUCTOR PACKAGE AND A METHOD TO ASSEMBLE THE SAME**

---

plurality of bond wires connecting the die contact pads and the lead contact areas of the contact leads;

the upper surface of the die, contact leads, bond wires and space between the die pad and contact leads being encapsulated with mold material; and

the bottom surface of the non-leaded package comprising mold material and the bottom surface of the die attach pad and contact leads on an essentially common plane.

26. (New) The non-leaded semiconductor package according to claim 25, wherein the leadframe comprises a thickness of approximately 1mm to approximately 0.01mm.

27. (New) The non-leaded semiconductor package according to claim 25, wherein the leadframe comprises a thickness of approximately 0.25mm to approximately 0.1mm.

28. (New) A non-leaded semiconductor package having a leadframe strip assembly comprising:

a semiconductor die;

a carrier tape including a metal foil attached thereon; and

a plurality of leadframes formed in the metal foil, each leadframe comprising a die pad laterally surrounded by a plurality of contact leads in the metal foil.

29. (New) The non-leaded semiconductor package according to claim 27, comprising wherein the die pad and contact leads of each leadframe of the metal foil are spatially isolated from each other.

30. (New) The non-leaded semiconductor package according to claim 28, comprising spatially isolating each leadframe of the metal foil from its neighbor.

31. (New) The non-leaded semiconductor package according to claim 29, wherein the carrier tape comprises a polyimide film with a silicone adhesive coating and the metal foil comprises OFHC Cu.

**Preliminary Amendment**

Applicant: Min Wee Low, et al.

Serial No.: Not yet assigned

(International Application No. PCT/IB2004/000496)

Filed: Herewith

(International Filing Date: 26 February 2004)

Docket No.: I431.173.101/FIN588PCT/US

Title: **NON-LEADED SEMICONDUCTOR PACKAGE AND A METHOD TO ASSEMBLE THE SAME**

---

32. (New) The non-leaded semiconductor package according to claim 30, wherein the metal foil comprises a thickness of approximately 1mm to approximately 0.01mm or approximately 0.25mm to approximately 0.1mm.

33. (New) The non-leaded semiconductor package 31, wherein the leadframe strip assembly further comprises a plurality of semiconductor die, each including an active surface with a plurality of die contact pads and a passive surface, attached to the die attach pads and electrically connected to the leadframe by a plurality of bond wires connecting the die contact pads and the lead contact areas of the contact leads.

34. (New) A leadframe strip assembly comprising:  
means for providing a carrier tape including a metal foil attached thereon; and  
means for providing a plurality of leadframes formed in the metal foil, each leadframe means comprising a die pad laterally surrounded by a plurality of contact leads in the metal foil.